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AGRICULTURE NEAR LONDON.

A HINT TO FARMERS.

THERE is probably no contrast more marked than that between the eager and vigorous life which pervades work and play in London, and the listlessness and want of energy which are generally so conspicuous in most of the agriculturists of the home counties. Flying from town to town by rail, the traveller does not grasp these and other salient agricultural features of the country. Only the pedestrian or rider, as he wanders at his will through lanes and along bridle-roads, is able thoroughly to become acquainted with the actual appearance of the farms which he passes. The contrast between the busy metropolis, which is so near, and the ill-cultivated country outside, continually serves to provide matter for profitable, if not always pleasant reflection. There is no better route for any one who wishes thus to combine exercise and reflection than that to the north of London—say, by way of Harrow, Pinner, and Rickmansworth to Amersham. He will then pass through very picturesque portions of the counties of Middlesex, Herts, and Bucks, and he will certainly see much which will give abundant food for thought. From London to Rickmansworth, a distance of seventeen miles, and between Uxbridge on the west and Watford on the east, the country is almost entirely devoted to grazing or haymaking. Field after field of grass is passed. There are few more charming pieces of rural scenery than the richly wooded fields as seen from the heights of Moor Park, or the view of Middlesex from the road between Uxbridge and Ickenham, which passes along the summits of the hills which border the southern side of the valley of the Colne.

But to the north of this valley in Herts and Bucks, the system of agriculture entirely changes. There is very little grass-land except in the valleys watered by the Chess and the Misbourne stream. There is indeed a superficial difference

between the agriculture of these two counties, for the Bucks farmer is not quite so fond of the enormous hedgerows which seem sometimes to make Herts quite oppressive. Perhaps, too, there are a few more sheep; but otherwise the main features are the same—fields of grain and turnips, and dense woods of oak or beech. The Colne, in fact, divides a pastoral from an arable country. But any one who is accustomed to a country-life can see that the farming is generally of a very wretched kind. The hedges, picturesque enough indeed, with their great masses of foliage, and wealth of honeysuckle and clematis, take up an enormous amount of ground, and the fields are too often disgracefully dirty. It would be easy to count many stubbles overgrown from end to end with groundsel and thistles, and turnip-fields full of poppies and other weeds. Such slovenliness of cultivation is of course kept in countenance by gaps in hedges and by half-broken gates, more picturesque to the sketcher than pleasing to the eye of a Scotch farmer. It is obvious, in fact, that agriculture in a great part of Bucks and Herts is in a thoroughly backward condition: the labourer, earning thirteen shillings a week, stupefies himself in one of the endless public-houses; and the farmer continues to grow wheat and complain at agricultural dinners of the badness of the times. Yet, within seventeen, twenty, and twenty-five miles of him is a vast population demanding food.

Let any one stand on the borders of the three counties which have been named, and the question will at once arise in his mind, Why, if the farmers in one part of Middlesex can profitably supply London with milk, butter, and hay, cannot the farmers of the adjacent districts do the same? The curious differences which prevail within a few miles may be shown by the fact that as you go through the village of Harefield, on the south of the Colne, you will, about four or five o'clock in the afternoon, see the milkman going round, and women waiting at their doors for the evening's supply. If you cross to the north side of

the Colne, you may have to go to three or four farms before you will find a place where it is possible to find any milk. The cottagers, except on rare occasions, do without it altogether; and labourers will tell you that it would pay a gentleman to keep a cow and sell the milk, when he did not require it, to the poor people. But it goes without saying that where there is milk, there may be also butter; and if it pays the farmers of Dorset to make butter and send it up to London, obviously it would be more profitable to the farmers who are nearer London to do the same. The great herds of milch cows which fill all the rich pastures from Axminster to Yeovil do not produce milk and butter for the people of those parts, as any one will discover who cares to ramble among the pleasant farmsteads of Dorset and Somerset.

It is almost certain that the farmers in the districts near London who continue to grow wheat—and the agricultural statistics have clearly shown that it is in the counties which are already characterised as grazing ones that the increase of permanent pasture has in the last few years taken place—have chiefly themselves to thank for the unprofitable nature of their business. At a recent meeting of the Middlesex Agricultural Society one speaker admitted that on his farm of five hundred acres he spent twenty-one pounds per week on labour; whilst, if it were grass-land, five pounds would be his weekly expenditure. Yet this worthy person seemed to have no intention of abandoning his present system, ostensibly from a good-natured wish not to throw labourers out of employment. That the question of the agricultural labourers must certainly become one worthy of serious consideration, there can be no doubt, for every acre which becomes permanent pasture lessens the demand for manual labour. Farmers, too, near London might well combine for the purpose of selling their own milk. A few amateurs have already done so with good results; but it is the professional farmers who should set such schemes on foot.

The most thriving kind of cultivation near London in the districts we have mentioned is certainly that of the cherry and the watercress. The latter is not a mere casual growth in streams and ponds; it is carefully planted every autumn, and thinned; the water is kept at a uniform depth, and the bottom is always bright and clean. If the watercress growers could but diffuse something of their care into the farmers, things might look brighter for them. As to the cherry orchards, they are a perfect treasure to many farmers in Bucks and Herts, who get a round sum of money without cost of cultivation.

To some extent, perhaps, the low condition of agriculture so near London is caused—paradoxical as it may seem to say so—by this very proximity of the metropolis. It is a fact which cannot be disputed, that the most intelligent of the people

leave their homes and settle in London. If a farmer has a clever son, he puts him to business in London. If the son of the carter gets on well at school, and is an intelligent and active youth, he very soon finds that more money can be made and more pleasure obtained in London, than in tilling wheat for thirteen shillings a week, and spending it on bad beer at the *Three Bells*; consequently, the agricultural population of Berks and Herts is 'the residuum.' That this circumstance must seriously affect the nature of the farming cannot be doubted. In these districts, farmers, so far from bracing themselves up to meet the altered conditions of the times, have as yet scarcely appreciated the fact that there has been a change. They are still on the lookout for a profitable market for their wheat, with much the same feeling that it will be sent in due season, as they daily expected rain when their tubs—for, in nine cases out of ten, a farmer does not possess a rain-water tank below ground—were dry, and the springs were beginning to get alarmingly low, in the hot summer of 1884.

A HOUSE DIVIDED AGAINST ITSELF.

CHAPTER IX.

'WHAT is this I hear about Waring?' said General Gaunt, walking out upon the loggia, where the Durants were sitting, on the same memorable afternoon on which all that has been above related occurred. The general was dressed in loosely fitting light-coloured clothes. It was one of the recommendations of the Riviera to him that he could wear out there all his old Indian clothes, which would have been useless to him at home. He was a very tall old man, very yellow, nay, almost greenish in the complexion, extremely spare, with a fine old white moustache, which had an immense effect upon his brown face. The well-worn epigram might be adapted in his case to say that nobody ever was so fierce as the general looked; and yet he was at bottom rather a mild old man, and had never hurt anybody, except the sepoys in the Mutiny, all his life. His head was covered with a broad light felt hat, which, soft as it was, took an aggressive cock when he put it on. He held his gloves dangling from his hand with the air of having been in too much haste to put them to their proper use. And his step, as he stepped off the carpet upon the marble of the loggia, sounded like that of an alert officer who has just heard that the enemy has made a reconnaissance in force two miles off, and that there is no time to lose. 'What is this I hear about Waring?' he said.

'Yes, indeed!' cried Mrs Durant.

'It is a most remarkable story,' said his Reverence, shaking his head.

'But what is it?' asked the general. 'I found Mrs Gaunt almost crying when I went in. What she said was: "Charles, we have been nourishing a viper in our bosoms." I am not addicted to metaphor, and I insisted upon plain English; and then it all came out. She told me Waring was an impostor, and had been taking us all in; that some old friend of his had been here, and had told you.—Is that true?'

'My dear!' said Mr Durant in a tone of remonstrance.

'Well, Henry! you never said it was to be kept a secret. It could not possibly be kept a secret—so few of us here, and all so intimate.'

'Then he is an impostor?' said General Gaunt.

'Oh, my dear general, that's too strong a word.—Henry, you had better tell the general your own way.'

The old clergyman had been shaking his head all the time. He was dying to tell all that he knew; but he could not but improve the occasion. 'Oh, ladies, ladies!' he said, 'when there is anything to be told, the best of women is not to be trusted.—But, general, our poor friend is no impostor. He never said he was a widower.'

'It's fortunate we've none of us girls'—the general began; then with a start: 'I forgot Miss Tasie; but she's a girl—a girl in ten thousand,' he added with a happy inspiration. Tasie, who was still seated behind the teacups, gave him a smile in reply.

'Poor dear Mr Waring,' she said, 'whether he is a widower or has a wife, it does not matter much. Nobody can call Mr Waring a flirt. He might be any one's grandfather from his manner. I cannot see that it matters a bit.'

'Not so far as we are concerned, thank heaven,' said her mother with the air of one whose dear child has escaped a danger. 'But I don't think it is quite respectable for one of our small community to have a wife alive and never to let any one know.'

'I understand, a most excellent woman; besides being a person of rank,' said Mr Durant. 'It has disturbed me very much, though, happily, as my wife says, from no private motive.' Here the good man paused, and gave vent to a sigh of thankfulness, establishing the impression that his ingenuous Tasie had escaped as by a miracle from Waring's wiles; and then he continued: 'I think some one should speak to him on the subject. He ought to understand that now it is known, public opinion requires—Some one should tell him'—

'There is no one so fit as a clergyman,' the general said.

'That is true, perhaps, in the abstract; but with our poor friend—There are some men who will not take advice from a clergyman.'

'O Henry! do him justice. He has never shown anything but respect to you.'

'I should say that a man of the world, like the general'—

'Oh, not I,' cried the general, getting up hurriedly. 'No, thank you; I never interfere with any man's affairs.—That's your business, Padre. Besides I have no daughter—whether he is married or not is nothing to me.'

'Nor to us, heaven be praised!' said Mrs Durant; and then she added: 'It is not for ourselves; it is for poor little Frances, a girl that has never known a mother's care! How much better for her to be with her mother, and properly introduced into society, than living in that huggernugger way without education, without companions. If it were not for Tasie, the child would never see a creature near her own age.'

'And I am much older than Frances,' said Tasie, rather to heighten the hardship of the situation than from any sense that this was true.

'Decidedly the Padre ought to talk to him,' said the Anglo-Indian. 'He ought to be made to feel that everybody at the station—Wife all right, do you know? Bless me! If the wife is all right, what does the man mean? Why can't they quarrel peaceably, and keep up appearances, as we all do?'

'O no; not all; *we* never quarrel.'

'Not for a long time, my love.'

'Henry, you may trust to my memory. Not for about thirty years. We had a little disagreement then about where we were to go for the summer. Oh, I remember it well—the agony it cost me!—Don't say "as we all do," general, for it would not be true.'

'You are a pair of old turtle-doves,' quoth the general.—'All the more reason why you should talk to him, Padre. Tell him he's come among us on false pretences, not knowing the damage he might have done. I always thought he was a queer hand to have the education of a little girl.'

'He taught her Latin; and that woman of theirs, Mariuccia, taught her to knit. That's all she knows. And her mother all the time in such a fine position, able to do anything for her. Oh, it is of Frances I think most.'

'It is quite evident,' said the general, 'that Mr Durant must interfere.'

'I think it very likely I shall do no good. A man of the world, a man like that'—

'There is no such great harm about the man.'

'And he is very good to Frances,' said Tasie, almost under her breath.

'I daresay he meant no harm,' said the general, 'if that is all. Only, he should be warned; and if anything can be done for Frances—It is a pity she should see nobody, and never have a chance of establishing herself in life.'

'She ought to be introduced into society,' said Mrs Durant.—'As for establishing herself in life, that is in the hands of providence, general. It is not to be supposed that such an idea ever enters into a girl's mind—unless it is put there, which is so often the case.'

'The general means,' said Tasie, 'that seeing people would make her more fit to be a companion for her papa. Frances is a dear girl; but it is quite true; she is wanting in conversation. They often sit a whole evening together and scarcely speak.'

'She is a nice little thing,' said the general energetically; 'I always thought so; and never was at a dance, I suppose, or a junketing of any description in her life. To be sure, we are all old duffers in this place. The Padre should interfere.'

'If I could see it was my duty,' said Mr Durant.

'I know what you mean,' said General Gaunt. 'I'm not too fond of interference myself. But when a man has concealed his antecedents, and they have been found out. And then the little girl'—

'It is Frances I am thinking of,' explained Mr Durant.

It was at last settled among them that it was

clearly the clergyman's business to interfere. He had been tolerably certain to begin with; but he liked the moral support of what he called a consensus of opinion. Mr Durant was not so reluctant to interfere as he professed to be. He had not much scope for those social duties which, he was of opinion, were not the least important of a clergyman's functions; and though there was a little excitement in the uncertainty from Sunday to Sunday how many people would be at church, what the collection would be, and other varying circumstances, yet the life of the clergyman at Bordighera was monotonous, and a little variety was welcome. In other chaplaincies which Mr Durant had held, he had come in contact with various romances of real life. These were still the days of gaming, when every German bath had its *tapis vert* and its little group of tragedies. But the Riviera was very tranquil, and Bordighera had just been found out by the invalid and the pleasure-seeker. It was monotonous; there had been few deaths, even among the visitors, which are always varieties in their way for the clergyman, and often are the means of making acquaintances both useful and agreeable to himself and his family. But as yet there had not even been many deaths. This gave great additional excitement to what is always exciting for a small community, the cropping up under their very noses, in their own immediate circle, of a mystery, of a discovery which afforded boundless opportunity for talk. The first thing naturally that had affected Mr and Mrs Durant was the miraculous escape of Tasie, to whom Mr Waring *might* have made himself agreeable, and who *might* have lost her peace of mind, for anything that could be said to the contrary. They said to each other that it was a hairbreadth escape; although it had not occurred previously to any one that any sort of mutual attraction between Mr Waring and Tasie was possible.

And then the other aspects of the case became apparent. Mr Durant felt now that to pass it over, to say nothing about the matter, to allow Waring to suppose that everything was as it had always been, was impossible. He and his wife had decided this without the intervention of General Gaunt; but when the general appeared—the only other permanent pillar of society in Bordighera—then there arose that consensus which made further steps inevitable. Mrs Gaunt looked in later, after dinner, in the darkening; and she, too, was of opinion that something must be done. She was affected to tears by the thought of that mystery in their very midst, and of what the poor (unknown) lady must have suffered, deserted by her husband, and bereft of her child. 'He might at least have left her her child,' she said with a sob; and she was fully of opinion that he should be spoken to without delay, and that they should not rest till Frances had been restored to her mother. She thought it was 'a duty' on the part of Mr Durant to interfere. The consensus was thus unanimous; there was not a dissentient voice in the entire community. 'We will sleep upon it,' Mr Durant said. But the morning brought no further light. They were all agreed more strongly than ever that Waring ought to be spoken to, and that it was undeniably a duty for the clergyman to interfere.

Mr Durant accordingly set out before it was

too late, before the mid-day breakfast, which is the coolest and calmest moment of the day, the time for business, before social intercourse is supposed to begin. He was very carefully brushed from his hat to his shoes, and was indeed a very agreeable example of a neat old clerical gentleman. Ecclesiastical costume was much more easy in those days. It was before the era of long coats and soft hats, when a white tie was the one incontrovertible sign of the clergyman who did not think of calling himself a priest. He was indeed, having been for a number of years located in Catholic countries, very particular not to call himself a priest, or to condescend to any garb which could recall the *soutane* and three-cornered hat of the indigenous clergy. His black clothes were spotless, but of the ordinary cut, perhaps a trifle old-fashioned. But yet neither *soutane* nor *berretta* could have made it more evident that Mr Durant, setting out with an ebony stick and black gloves, was an English clergyman going mildly, but firmly, to interfere. Had he been met with in the wilds of Africa, even there, mistake would have been impossible. In his serious eye, in the aspect of the corners of his mouth, in a certain air of gentle determination diffused over his whole person, this was apparent. It made a great impression upon Domenico when he opened the door. After what had happened yesterday, Domenico felt that anything might happen. 'Lo, this man's brow, like to a title leaf, foretells the nature of the tragic volume,' he said to Mariuccia—at least if he did not use these words, his meaning was the same. He ushered the English pastor into the room which Mr Waring occupied as a library, with bated breath. 'Master is going to catch it,' was what, perhaps, a light-minded Cockney might have said. But Domenico was a serious man, and did not trifle.

Waring's library was, like all the rooms of his suite, an oblong room, with three windows and as many doors, opening into the dining-room on one hand, and the anteroom on the other. It had the usual indecipherable fresco on the roof, and the walls on one side were half clothed with bookcases. Not a very large collection of books, and yet enough to make a pretty show, with their old gilding, and the dull white of the vellum in which so many were bound. It was a room in which he spent the most of his time, and it had been made comfortable according to the notions of comfort prevailing in these regions. There was a square of carpet under his writing-table. His chair was a large old *fauteuil*, covered with very faded damask; and curtains, also faded, were festooned over all the windows and doors. The *persians* were shut, to keep out the sun, and the cool atmosphere had a greenish tint. Waring, however, did not look so peaceful as his room. He sat with his chair pushed away from the table, reading what seemed to be a novel. He had the air of a man who had taken refuge there from some embarrassment or annoyance; not the tranquil look of a man occupied in so-called studies needing leisure, with his notebooks at hand, and pen and ink within reach. Such a man is usually very glad to be interrupted in the midst of his self-imposed labours; and Waring's first movement was one of satisfaction. He threw down the book, with

an apology for having ever taken it up in the half-ashamed, half-violent way in which he got rid of it. Don't suppose I care for such rubbish, his gesture seemed to say. But the aspect of Mr Durant changed his look of welcome. He rose hurriedly, and gave his visitor a chair. 'You are early out,' he said.

'Yes; the morning, I find, is the best time. Even after the sun is down, it is never so fresh in the evening. Especially for business, I find it the best time.'

'That means, I suppose,' said Waring, 'that your visit this morning means business, and not mere friendship, as I had supposed?'

'Friendship always, I hope,' said the tidy old clergyman, smoothing his hat with his hand; 'but I don't deny it is something more serious—a—a—question I want to ask you, if you don't mind'—

Just at this moment, in the next room there rose a little momentary and pleasant clamour of voices and youthful laughter; two voices certainly—Frances and another. This made Mr Durant prick up his ears. 'You have—visitors?' he said.

'Yes.—I will answer to the best of my ability,' said Waring with a smile.

Now was the time when Mr Durant realised the difficult nature of his mission. At home in his own house, especially in the midst of the consensus of opinions, with everybody encouraging him and pressing upon him the fact that it was 'a duty,' the matter seemed easy enough. But when he found himself in Waring's house, looking a man in the face with whose concerns he had really no right to interfere, and who had not at all the air of a man ready to be brought to the confessional, Mr Durant's confidence failed him. He faltered a little; he looked at his very unlikely penitent, and then he looked at the hat which he was turning round in his hands, but which gave him no courage. Then he cleared his throat. 'The question is—quite a simple one,' he said. 'There can be no doubt of your ability—to answer. I am sure you will forgive me if I say, to begin with'—

'One moment. Is this question—which seems to trouble you—about my affairs or yours?'

Mr Durant's clear complexion betrayed something like a flush. 'That is just what I want to explain. You will acknowledge, my dear Waring, that you have been received here—well, there is not very much in our power—but with every friendly feeling, every desire to make you one of us.'

'All this preface shows me that it is I who have been found wanting. You are quite right; you have been most hospitable and kind. To myself, almost too much so; to my daughter, you have given all the society she has ever known.'

'I am glad, truly glad, that you think we have done our part. My dear friend, was it right, then, when we opened our arms to you so unsuspectingly, to come among us in a false character—under false colours?'

'Stop!' said Waring, growing pale. 'This is going a little too far. I suppose I understand what you mean. Mannering, who calls himself my old friend, has been here; and as he could not hold his tongue if his life depended upon it,

he has told you— But why you should accuse me of holding a false position, of coming under false colours—which was what you said'—

'Waring!' said the clergyman in a voice of mild thunder, 'did you never think, when you came here, comparatively a young, and—well, still a good-looking man—did you never think that there might be some susceptible heart—some woman's heart?'

'Good heavens!' cried Waring, starting to his feet, 'I never supposed for a moment'—

'—Some young creature,' Mr Durant continued solemnly, 'whom it might be my duty and your duty to guard from deception; but who, naturally, taking you for a widower'—

Waring's countenance of horror was unspeakable. He stood up before his table like a little boy who was about to be caned. Exclamations of dismay fell unconsciously from his lips. 'Sir! I never thought'—

Mr Durant paused, to contemplate with pleasure the panic he had caused. He put down his hat and rubbed together his little fat white hands. 'By the blessing of providence,' he said, drawing a long breath, 'that danger has been averted. I say it with thankfulness. We have been preserved from any such terrible result. But had things been differently ordered—think, only think! and be grateful to providence.'

The answer which Waring made to this speech was to burst into a fit of uncontrollable laughter. He seemed incapable of recovering his gravity. As soon as he paused, exhausted, to draw breath, he was off again. The suggestion, when it ceased to be horrible, became ludicrous beyond description. He quavered forth: 'I beg your pardon' between the fits, which Mr Durant did not at all like. He sat looking on at the hilarity very gravely without a smile.

'I did not expect so much levity,' he said.

'I beg your pardon,' cried the culprit with tears running down his cheeks. 'Forgive me. If you will recollect that the character of a gay Lothario is the last one in the world'—

'It is not necessary to be a gay Lothario,' returned the clergyman.—'Really, if this is to continue, it will be better that I should withdraw. Laughter was the last thing I intended to produce.'

'It is not a bad thing, and it is not an indulgence I am given to. But, I think, considering what a very terrible alternative you set before me, we may be very glad it has ended in laughter. Mr Durant,' continued Waring, 'you have only anticipated an explanation I intended to make.—Mannering is an ass.'

'I am sure he is a most respectable member of society,' said Mr Durant with much gravity.

'So are many asses.—I have some one else to present to you, who is very unlike Mannering, but who betrays me still more distinctly.—Constance, I want you here.'

The old clergyman gazed, not believing his eyes, as there suddenly appeared in the doorway the tall figure of a girl who had never been seen as yet in Bordighera, a girl who was very simply dressed, yet who had an air which the old gentleman, acquainted, as he flattered himself, with the air of fine people, could not ignore. She stood with a careless grace, returning slightly,

not without a little of that impertinence of a fine lady which is so impressive to the crowd, his salutation. 'Did you want me, papa?' she quietly asked.

(To be continued.)

THE FORCES BENEATH US.

THE intensity of the subterranean forces over any given area of the earth's surface is in a constant state of ebb and flow, now rising to a flood of great power, now ebbing into a long period of quiescence, and then again gathering force for a new and awful manifestation of energy. It would seem that the volcanic forces of Southern Europe are again approaching a period of maximum intensity. But so recently as the summer of 1883, the beautiful little island of Ischia was convulsed by earthquake shocks. It was the season of the year when all was at its gayest and brightest, the little capital being filled by the many Neapolitans and Romans who find it so delightful a retreat in summer. On a bright July evening, when all were sitting out in the clear, calm air, under a cloudless sky, there came a sudden earth-throe, and in a few seconds the charming town of Casamicciola was a shapeless heap of ruins; whilst the other small towns which dot the little island shared in a less degree the same fate. Only two years before, another shock had been experienced over the same area; but the earthquake of 1883 was of much greater intensity than that which preceded it.

It is but a few months, too, since the subterranean forces seemed to threaten an outbreak in our own country, manifesting their gathering energy by a slight earth-tremor in Suffolk; and now Spain has been the scene of their awful activity. On Christmas night last, the inhabitants of Madrid were thrown into a state of alarm by two slight vibrations. On the same evening, more violent earthquakes occurred in the provinces of Andalusia, Malaga, and Granada. In the town of the latter name, the whole population, we are told, fearing a repetition of the shocks, camped out in squares and other open places. On the morning of the 26th, three severe shocks were felt at Granada; whilst at Torrox, in the same province, several yet more violent shocks were experienced later in the same day. The greater part of the Alhama has been overthrown; more than half the inhabitants of Albuñuelas killed; and the cathedrals of Seville and Granada seriously damaged. Each day the provinces of Granada and Malaga were shaken by fresh earth-throes, and the loss of life has been very great. The subterranean forces augmented in intensity daily, reaching a maximum on December 31, when a more severe shock than any experienced previously was felt at Granada, that being the tenth which up to that date had occurred there. The inhabitants were panic-stricken; thousands fled from their homes; those who remained paced the streets in religious pro-

cessions, headed by their priests, imploring the Divine clemency. From this date the shocks were less violent in character, although a severe one shook Alhama on January 12, and they have now happily altogether ceased. About the same time, an earthquake seems to have been experienced at sea, the captain of a Cadiz barque reporting a shock, accompanied by a loud roaring noise, on December 18, when he was not long out of Cadiz; seven days, however, before the first shocks were experienced in the Spanish provinces.

Often in the world's history must Spain have been the field of volcanic activity, as her crumbling caves remain to attest, and it was in this corner of Europe that the greatest manifestation of subterranean energy in modern times occurred. The story of the earthquake which one hundred and thirty years ago destroyed Lisbon, is a familiar one. Then, as in the case of the present earthquake, the inhabitants do not appear to have had any warning of the coming danger; but suddenly a noise like the rolling of thunder was heard underground, this being followed immediately by a tremendous shock, which threw down the greater part of the city, and in the course of a few minutes sixty thousand persons perished. The sea first retired, and then rose to a height of fifty feet above its ordinary level; and the new quay just completed, on which the people had collected for safety, sank with all its human freight; and where it had stood, there was afterwards found to be one hundred fathoms of water, if, indeed, as some accounts say, the sea was not there unfathomable. The effects of this earthquake were felt over so large a region, that it has been calculated a portion of the earth's surface equal to four times the area of Europe was included within its range. From the West Indies and the great inland lakes of Canada, it extended its range to our own country, to Sweden, and to North Germany. The shock then, too, was also felt at sea, producing an effect similar to that which follows when a vessel strikes a sunken rock or runs aground.

But whilst earthquakes may thus seem to happen without the slightest warning, there can be little doubt that their apparent suddenness is due either to want of observation, or to a wilful disregard of the signs which indicate the advent of subterranean outbursts. Their approach is usually heralded in many ways—underground noises, gaseous emanations from the soil, the drying up of wells, a change in the temperature of thermal springs, haziness in the air, being the more general forerunners of these phenomena. At such periods, too, a sense of dizziness is often experienced by dwellers in the threatened locality, whilst microcosmical instruments, if there be any in the district, will register slight variations of subterranean activity. During the continuance of the earthquake, the ground often heaves like the sea, producing feelings akin to the familiar pangs of sea-sickness; rivers seek fresh channels; large fissures open in the earth; and permanent changes take place in the geographical features of the country. Thus the series of earthquakes which in 1826 and 1827 visited New Zealand, caused so distinct a change that the former features

of the coast could be no longer recognised. The earthquakes of the present century in Chili have produced a permanent elevation of the coast there; and recent subterranean outbursts in Java have considerably modified the geography of that region.

Concerning the origin of these phenomena, so far-reaching in their effects, it must be admitted that the true theory has never yet been framed. Early speculations were much tinged with the superstitions of the time; and even so late as the beginning of the present century, we find a lingering remnant of this superstitious regard of physical phenomena in the naming, by the inhabitants of Sindree, of a mound thrown up during the Indus earthquake, 'Ullah Bund,' or the Mound of God.

It is obvious that the study of these interesting phenomena is beset with many difficulties. Observations can often only be made at imminent personal risk. Yet, spite of this, beginning with the few observers and the almost mythical records of the days of Pliny, the fascinating subject has continued to attract an ever increasing circle of students, who have ever more earnestly endeavoured to pierce the veil of mystery which surrounds it. Each fresh manifestation of subterranean energy is now watched with increased interest. Whenever possible, the sequence of events is noted with extreme detail, old theories become weakened, fresh ideas confirmed, and new avenues of thought open themselves to the earnest investigator at every step.

With the phenomena of earthquakes, those of volcanoes are closely linked, volcanic outbursts being frequently heralded and accompanied by earthquake shocks; and there can be little doubt that the two are most intimately bound up, if, indeed, they are not two effects arising from a single cause. This being so, the facts which surround the one class of phenomena may be drawn upon in attempting to frame an explanation whence and how either originates. That some portions of the earth's interior are in an immensely heated condition, the nature of the materials ejected from volcanic vents renders evident; and observation has also clearly demonstrated the fact, that the temperature increases from the surface of the earth downwards, the average increase being one degree Fahrenheit for every fifty feet of descent. Now, from considerations connected with the figure of the earth and the other members of the system to which it belongs, it has, with much probability, been inferred that the solar system has evolved from one of those glowing gaseous aggregations termed nebula; that 'this world was once a fluid haze of light'; and that when it first existed as an independent body, it was in a state of the most fervent heat, a residue of which now gives rise to volcanic phenomena.

What happened, then, as our earth radiated its primitive heat into space? The question is a vexed one. So many men, so many minds. One class of theorists, not giving sufficient weight to the fact that the increase of pressure towards the earth's centre would tend to keep matter solid there under the influence of high temperatures, suppose that the process of radiation by the earth into space has, throughout the lapse of ages, resulted in the formation of a solid external crust

covering a still fluid nucleus. But this class of theorists is like the volcanoes of Britain, practically extinct, or is at least as subdued and unpretending as the Suffolk earthquake. Other geologists, giving more weight to the fact of increase of pressure towards the earth's centre, consider that its condition is that of a body with a solid nucleus and a solid external crust, between which there still remains a residue of liquid matter.

In objection to both these views it has been shown that for the earth to maintain its rigidity under the moon's attraction, such a crust must be of enormous thickness, of so great a thickness, indeed, that Sir William Thomson, who investigated the matter, prefers to consider the earth as a solid globe cooling by contraction. On this view of the earth's condition, volcanic phenomena are explained as the result of the conversion into heat of the mechanical force of contraction; while earthquakes may themselves be regarded as proceeding from the crushing and bending of the rocks by the stress of contraction itself. Again, there are those who regard the earth as a globe mainly solid throughout, but with lakes of liquid matter in various parts near the surface, remnants of its former heat, and believe that it is from these lakes, as the earth continues to contract, that matter is forced into volcanic vents to feed their intermittent fires; whilst, looking at the fact that earthquakes so frequently precede an eruption, these earth-tremors may from this point be regarded as ineffectual efforts by the pent-up subterranean forces to establish a volcanic outburst; and since the observations of Mr Mallet in earthquake localities have demonstrated the fact that shocks emanate from centres near the earth's surface, being sometimes nearer, and sometimes further, as the shocks are mainly horizontal or mainly vertical in character, there would seem to be some probability in this latter view of the origin of the subterranean forces; but there are many arguments which militate against its acceptance.

There are those also who, while they regard the matter of the earth as being in a really solid condition, yet conceive that some portions of it may be in a state of potential liquidity; that is to say, ready to assume the liquid form on a release of pressure; and when it is remembered that a barometric fall of two inches—a by no means remarkable circumstance—means the removal of millions of pounds of air-pressure from off the surface of the earth, it seems as though there might be some truth in this view also; but it loses probability when we reflect, that for this release of pressure to be effectual in producing liquidity, it is necessary that the solid matter of the earth should be just on that borderland between the solid and liquid states, which it is so difficult to imagine can often be the case; and it must be finally admitted that science has yet to frame a perfectly satisfactory explanation of these interesting phenomena.*

Human nature is too apt to dwell upon the awful results of these evident and striking mani-

* For a fuller discussion of the question as to the interior condition of the globe, see article in *Chamber's Journal* for Jan. 21, 1882, 'Is the Interior of the Earth Molten or Solid?'

festations of nature, and to pass over her more regular and noiseless, yet far more potent activity. It must not, therefore, be forgotten that these subterranean outbursts we have been considering, are but the more violent and pronounced examples of a slow and gradual process of upheaval and depression which is going on at all portions of the earth's surface. And these movements of the earth's crust, whether they be the slow upheaval and depression to which reference has just been made, or the cataclysmal efforts of an earthquake or volcanic outburst, are in the main most beneficial to man, and have an important influence on his progress and well-being. It is the short-sighted philosophy of imperfect knowledge which regards only the evil which such catastrophes produce. The heated regions of the earth's crust where the volcanic forces are in energy are the laboratories of nature, where her most valued gems and minerals are produced; whilst the earth-throes which devastate a country, and seem to be fraught only with evil to mankind, bring the rocks containing them to the surface; and we may strangely reflect, that but for these eruptive efforts, iron, and many other minerals which have contributed to the comfort and progress of man, might for ever have remained unknown to him. One of 'the fairy tales of science and the long result of time' is the gradual change in the relative positions of continent and sea which these oscillations of the earth's crust have brought about. Our own island has now been submerged until the sea washed its mountain tops, now elevated until it ceased to be an island, and Father Thames flowed across a great stretch of land, which filled up the North Sea, to join the great Rhine, the two streams pouring their united waters almost within the arctic circle. So, over all the earth; continents have grown out of the sea, and great lands have given place to vast oceans. 'The stony rocks are not primeval, but the daughters of time.' Everywhere, flux and change—growth and decay; only fixed and unalterable the immutable and eternal laws which govern it.

THE CHINA HOUSE BURGLARY.

IN THREE CHAPTERS.—CHAP. III.

CURLEY BOND was well known in the district as a loafer and 'corner-man.' He had been through the hands of our people on a charge of deserting his wife and child and leaving them chargeable to the parish. The desertion was attributed at the time—and doubtless rightly attributed—to the fact that the wife's health having broken up, she was no longer able to maintain an idle husband by her labour. She died in the workhouse infirmary a few weeks after Curley had gone; but the child—the caricaturist of the present narrative—had been supported and educated in the union school of the district for the period of five years over which the desertion extended. At the end of that period, Curley, for some reason best known to himself, had ventured back to the neighbourhood—on the quiet. He was, however, speedily detected. Within a week, an anonymous letter

conveyed information of his return to the relieving officer. That official obtained a warrant, upon which Curley was arrested, being taken out of his bed in a common lodging-house in the small-hours of a Sunday morning. Seeking to make a virtue of necessity, he offered to relieve the guardians of the charge of the boy, and as a body they were disposed to accept his proposal and drop the prosecution. It was argued that he was a man of straw, so far as recovering the cost of past maintenance was concerned, and that, if he was imprisoned, the boy would only have to be kept at the ratepayers' expense for a longer period. To this view, however, old Dorrington was strongly opposed. He reasoned that such a fellow ought to be prosecuted, and that to prosecute him would be the truest economy in the long-run, since any punishment awarded to him would be calculated to act as a caution to others of his inclining. In the end, old Dorrington had his way. The prosecution was carried on; and though the specific charge of desertion failed on some technical point, Curley was convicted, and sentenced to three months' imprisonment, on the general count of being a rogue and vagabond. It came out in court that the proceedings were chiefly due to the action of Mr Dorrington, so that Curley was quite aware to whom he was indebted in the matter.

All this flashed through my mind in an instant, and in my opinion stamped Curley as being as certainly the inspirer, as his son had been the draughtsman of the wall cartoons that had figured as a prominent circumstance in the China House burglary. I remembered at this point that of late I had missed Curley from his accustomed corners, and my next question to the landlord—put in the same tone of affected indifference—was: 'What is Curley's little game nowadays?'

'Well, if you'd asked me a few months back, I should a said that whatever his game might be, it was something on the cross. Talk about insinuating as I'm a fence! If I had a been, I could a done plenty of business with him. He was always a-hinting at having stuff to get rid of, or knowing others as had, which came to the same thing.'

This latter piece of information still further strengthened my impression that I was on the right trail; but merely making a mental note of the statement for the present, I continued the pumping process by asking: 'But what is he doing now?'

'A-doin' now!' echoed the landlord, laughing aloud as he spoke. 'Why, he's set up as a betting-man, if you please—a feller as could hardly tell a racehorse from a towel-rail; as don't know a big B from a barn-door; and as couldn't reckon up anything beyond the run of his ten fingers, if he could do that.—A betting-man!' he went on with a snort of contempt: 'a "ramper," more like. Fact, that's just what he is—ramper and bully to a couple of outside betting-men. Wilson, Harding, & Co., they call themselves, and he sticks himself up as the Co.'

Here was more light with a vengeance. It was only by the strongest effort of self-repression that at this stage I was able to refrain from

showing my surprise and satisfaction. I had really been on the right line at first, then, I said to myself, though—and this thought was *not* satisfactory—I had allowed myself to be thrown off the scent almost at the first step. Wilson, it will be remembered, was the name of the carpenter I had suspected in the first instance; and Harding, as I now instantly recollected, was the name of the greengrocer with whom he lodged. As yet, I had of course no proof that these were the Wilson and Harding of the betting firm of which Curley Bond claimed to be the Co.; but in the assured frame of mind in which I now found myself, it never occurred to me to doubt that such was the case. I only wondered, and that with a painful sense of humiliation, that I had not at the time detected Harding's answers concerning his lodger as being much too pat and much too trippingly spoken.

I renewed the conversation, but could elicit no further useful information from the virtuously indignant publican. I had, however, I believed, learned enough, and I left him in high spirits. That I was now on the track of the performers in the China House job, I was firmly persuaded, and I could not but admire the constitution of the gang. An apparently respectable tradesman having a round in the neighbourhood in which the burglary had been committed, and owning a horse and cart, with which he could be out in the small-hours without exciting suspicion, on the plea that he was going to market—such a man as this was beyond price as a putter-up of and assistant in burglaries. And when with such a one was joined a man who legitimately possessed and was skilled in the use of the tools best suited to burglarious operations; a burly ruffian for heavy work, and a smart boy to be put through small openings or set to keep watch—when such a champion lot as this were banded together, it was easy to understand that they would be difficult to detect. All the greater, therefore, was the slice of luck that had enabled me to approach their identity.

That I had identified them, I now assumed as a moral certainty; but in criminal law, as I was of course aware, moral certainties alone go for nothing. That I had hit upon the men was something; but to land them, to be able to arrest them, not to speak of being sure of convicting them, it would be necessary to obtain material and legal evidence. To that end I at once set to work, and this time in a really confident spirit. And my self-confidence was abundantly justified. On the principle that it never rains but it pours, the good fortune that had at length befallen me in connection with the China House business continued to accompany me, for the case almost 'made itself.' I followed Wilson, Harding, & Co. to a metropolitan race meeting, and pointing them out to the police inspector in charge of the course, inquired if he knew anything of them.

'I don't myself,' he answered; 'but here's a man that I daresay does;' and turning to a sharp-featured bookmaker who was standing close by, he said: 'I say, Croft, do you know anything of Wilson and Harding?'

'No; I should like to,' he replied: 'they're a bit of a mystery.'

'How so?' I put in.

'Well, in this way. If I'm any judge on the point—and I reckon if I ain't, I ought to be—they do fairly well in the way of business; yet after almost every meeting, they seem somehow or other to get out of gear. At anyrate, they have to pawn their belongings to get home; but when you see them at the very next meeting, they are in full fig again. And mind you, it ain't with gambling after the races are over. As a matter of curiosity, I've watched 'em for that. Wilson billiards a bit certainly; but as far as that goes, he does more in the way of skinning than being skinned.'

It occurred to me that I could have very easily explained the mystery, but I merely asked: 'Where have they pawned?'

'I should think they've done it at most meetings they've attended; but I know for certain they did it at Lincoln and Liverpool, for I bought a ticket from them at each of those places.'

'Would you mind showing me the tickets?' I asked.

'Not at all,' he answered. 'I paid a fair price for them; and if there's any screw loose about the business, I'm innocent of any knowledge of it.' As he spoke, he produced the tickets from a pocket-book. They related the one to a field-glass, and the other to a dressing-case.

These articles and some others pledged in the establishments named on the tickets turned out—as I fully expected they would—to be parts of the proceeds of burglaries in our division. Using the record of past racing fixtures as a guide, I was enabled to trace more of the stolen property—including some of that taken from China House—in the same way.

From Dorrington's housemaid, too, I now obtained a valuable piece of information. After taking to the turf, Wilson had thrown her over; and as a consequence, her feelings towards him had undergone a change. She did not come forward voluntarily; but on being questioned a second time, she stated that about the time the burglaries were committed in the neighbourhood Wilson had made her presents of jewelry, which friends had told her were worth a heap of money. On questioning Charley as to how he had come by the things, he had given her putting-off answers, and that had made her fidgety. When I had spoken to her the first time, she had instantly bethought her of these presents, and it had occurred to her that possibly Charley had got innocently mixed up with some bad lot. But he was her sweetheart then, and of course it was not for her to bring him under suspicion. Now, however, things were different. He had shown her that she was nothing to him, and though she wished him no harm for that, it was not for her to risk her character for one who was nothing to her. That was the truth, and there was the jewelry—which latter proved to be part of the plunder of several burglaries.

All this was evidence. Upon the strength of it, warrants were issued; and while one party of our men followed Wilson, Harding, and Co. to a racecourse, in order to be able to take the gang at one swoop, another party of us entered and searched their respective homes. In that of the greengrocer we found stolen property to a large

amount; and in a coke-shed at the rear of the house we discovered a furnace and melting-pot that had evidently been much used.

I had independent evidence enough and to spare to secure a conviction; but directly the arrests were made, young Curley 'rounded;' and after due consideration, it was determined by the law officers in charge of the prosecution to allow him to turn Queen's evidence. Naturally, his was the chief evidence. In giving it, he tried, but unavailingly, to make things light for 'poor father.' There was no need to 'elicit' information from him. In reply to a few leading questions, he gave ample details as to how Harding, who knew the ways of the families and the runs of the houses, had manœuvred the jobs; and Wilson acted as leading hand in effecting entrance into the dwellings. He told what quantities of plunder had been taken, and how it had been divided and disposed of, and he joined freely in the 'hearty laughter' which greeted his assertion, that on more than one occasion, the gang, when driving back—in Harding's van—from a successful burglary, had given good morning to the policeman on the beat. As he stood in the witness-box glibly uttering his incriminating statements, Messrs Wilson and Harding regarded him with glances that were scarcely calculated to promote pleasant dreams for him. For a considerable period, however, he was relieved from any danger of reprisals upon their part, as the jury unhesitatingly brought in a verdict of guilty, and each of the prisoners was sentenced to seven years' penal servitude.

Though I am, I hope, a fairly modest man, I think I may regard the China House burglary as being in its way a feather in my cap. At anyrate I had every reason to feel satisfied with my part in the business. As a member of the police force, I could not take the reward that Mr Dorrington offered. But later, I was presented with a purse of sovereigns, in recognition, as the subscribers were pleased to put it, of the ability I had displayed in bringing to justice the gang of burglars who had so long infested the neighbourhood. In addition to this 'presentation,' I also received praise that was not altogether empty, seeing that it was instrumental in bringing me the professional promotion that subsequently fell to my lot.

WALKING IN CIRCLES.

IN the winter months, we not unfrequently hear of travellers in this country losing their lives in attempting to cross snow-covered moors while the light is imperfect. Even though the distance be only a few hundred yards, yet in the absence of a definite track or distinctive landmark, the traveller toils on through weary hours, until physical exhaustion overcomes him, and he falls into that lethargic sleep which is the terror of the traveller in cold regions. When the track of such a one is examined, it is found to be more or less of a circular nature, tending, no doubt, to irregularities, but such only as we should expect of an exhausted and despairing man. This tendency to walk in a circle when the individual is unaided by the eye, may be said to be almost

universal; and it is in virtue of this tendency that explorers journey only by aid of the compass. Some of our readers may recollect that in their school-days, walking blindfolded was a favourite pastime, some individuals diverging to one side, some to another, and but few walking in a straight line. These facts are so commonly known as to be beyond dispute; but we believe that the cause is not so generally understood, and is not perhaps even yet definitely ascertained.

Recently, the subject has been discussed in *Nature*, and the opinions of the scientists who have taken part in the discussion have brought out, that though the individual is unconscious of the tendency to walk in a circle, yet it is probably due to a physical inequality on the part of the individual. Let it be considered that if, in walking, the strides are unequal in length, they will tend to carry the individual in the direction of the shorter stride, so that in a certain time and space the walking track will assume the form of a circle. That the strides of an individual generally are unequal, we have proof in reminiscences of some experiments by Mr G. H. Darwin, who, with his eyes shut, started to walk in a grass field, and found that he had described a circle of about fifty yards' diameter, the divergence being towards the right; and in repeated experiments, he was unable to impose a sufficiently strong conscious bias in one direction to overcome the unconscious bias in the other. Further experimenting with eight schoolboys, six of whom were strongly right-handed and two feebly left-handed, he found that the six had a longer stride from left to right, one of the others from right to left, and the remaining one had equal strides. When these boys were caused to hop, the six used the left limb; the next one, the right; and the other hopped on the right on the first trial, then on the left on the second. Offering a prize to the one who should walk straightest, the boy who had equal strides and hopped equally well on either limb walked straight to the goal; the six left-legged boys diverged to the right; and the right-legged one to the left. These results tend to show that inequality of strides is due to physical inequality of the limbs; and one correspondent having suggested that the lower limbs differ in length, and hence cause variation in strides, an authority—Dr J. G. Garson, Royal College of Surgeons, London—adduces proof that this is so. In seventy skeletons, he found by measurement that seven—or ten per cent.—only had the lower limbs equal in length; twenty-five—35·8 per cent.—had the right limb longer than the left; and in thirty-eight instances—or 54·5 per cent.—the left limb was the longer. When these facts are considered, it becomes apparent that if the limbs are unequal in length, the individual cannot possibly walk straight unless when guided by the eye, so that the circular track of the lost traveller is just what we should expect in the circumstances.

We have not yet received any satisfactory explanation of the cause of the inequality of the length of the limbs. Of course, more rapid growth of one limb than of the other may take place; but why this should be so, or whether it takes place in childhood or youth, is not known, and, as Dr Garson says, 'will always be more or less a matter of theory.' 'Asymmetry,' he states, 'is almost invariably found throughout the whole skeleton. For example, it is extremely rare to find a skull the two sides of which are absolutely symmetrical.' Right and left handedness are, we know, due to greater preference or use of an individual arm, infants or children being equally dexterous with both, though usually acquiring a preferential use for the right hand. Greater dexterity is coincident with greater length of the dexterous arm, longer right arms predominating. This contrasts strangely with Dr Garson's observation that left-leggedness predominates; and a comparison of his measurements of the lower and upper limbs shows that in the majority of cases the right arm and the left leg are the longer in the individual. Thus he found that in fifty skeletons the right arm and the left leg were longer in twenty-three cases; the left arm and the right leg in six; the limbs on the right side longer than those on the left in thirteen cases; those on the left side were the longer in four cases; and in the remaining skeletons, the inequality of the limbs was somewhat varied. We cannot, therefore, assume that sleeping on a particular side, or any other habit which would tend to retard or promote growth of both limbs of one side, is the cause of the physical inequality. The evidence, however, is sufficient to show that inequality does exist; and this inequality explains why two persons walking together in a fog may unknowingly become separated, one of them may be left-legged, and diverge to the right; and the other, if right-legged, will diverge to the left.

THE MONTH:

SCIENCE AND ARTS.

THE Indian section of the Society of Arts had lately the opportunity of listening to an exhaustive paper upon 'the Agricultural Resources of India,' by Mr Buck, the head of the new department of Revenue and Agriculture. This paper is not only interesting, but is most encouraging, particularly at this time, when rumours of Russian aggression upon our Indian frontier, and possible union with a disaffected race, are far from being rare. It shows most plainly that our rule in India has in various ways been beneficial for that vast country. The gradual development of the railway system and the establishment of irrigation works have robbed the famines, which in times past used to decimate the people, of half their terrors. Now, the further extension of railways is mainly required in the interests of trade. Mr Buck tells us that there is room for improvement in the native methods of agriculture and in the old-fashioned implements used in field-work, and he also points out that the soil may be made to yield double what it does at present, when sufficient irrigation works have been erected. The rainfall is abundant,

but irregular; therefore, it is necessary that it should be stored in wet seasons for use in periods of drought.

The beet sugar-factory at Lavenham (Suffolk) has now commenced operations, with the best wishes of all interested in this new departure in British agriculture for its success. The process adopted takes advantage of all the improvements which have been introduced in continental factories during recent years, and it may be briefly described as follows: The roots, after being cleaned, are sliced into small pieces and shot into several receptacles, where water at varying temperatures exhausts them of most of their sugar, salts, and impurities. The spent beet is then, under pressure, made to yield still more; the residue being a valuable food for cattle, and worth six shillings per ton. The beet solution is now boiled with lime, which, when it has done its purifying work, is precipitated by means of carbonic acid gas blown through the liquid. It is afterwards treated with strontia, which separates the crystallisable sugar from the other constituents of the liquor; and the sugar is eventually concentrated in vacuum pans in the usual manner. The Lavenham works owe their existence to the enterprise of Messrs Bolton & Company; and if they prove successful, it is intended to extend the system to many other suitable districts of England.

The innocent little superstitions respecting the weather which our forefathers indulged in, are often, in these days of scientific forecasting, found at fault. An instance of this has been afforded by the recent Christmas. Berries were so superabundant that old folks shook their heads and uttered warnings of a hard winter. But instead of frost, we have had moist, dull, uncomfortable days of the most opposite character.

Mr H. H. Johnston recently published an interesting account of his expedition to the Kilimanjaro district of Eastern Africa, which will be found on the map slightly north of Zanzibar. The climate is that of a Devonshire summer. The traveller established a little village on a splendid site eleven thousand feet above the sea-level, from which Eastern Africa seemed spread out below him like a veritable map. From this point, Mr Johnston constantly ascended to greater heights; but his excursions were limited by reason of the natives refusing, on account of the cold, to ascend into the still higher mountain regions. The natives who inhabit the mountain of Kilimanjaro are tractable, and have a great notion of trade. They speak dialects belonging to the great Bantu group of languages. Warm springs occur at a height of fourteen thousand feet. Birds are abundant below, but rare above ten thousand feet. The Hyrax—the cony of Scripture—is common; while buffaloes, and even elephants, ascend the mountain to a great height. Mr Johnston has made a valuable collection, which he hopes will indicate the true relationships and character of the fauna and flora of this interesting region, which, according to his eloquent description, is a terrestrial paradise.

The alarming earthquake shocks in Southern Spain have once more called attention to this most terrible of all the phenomena of nature, and again raised the question as to whether buildings cannot be protected against the effects of such

shocks. According to the best authorities, the loss of life usually experienced could be almost wholly stopped if houses were built to resist earthquake shocks. One writer points out that such houses should be built with timbers firmly bolted together on the principle of a ship. 'If this were attended to,' he writes, 'there need never be the least danger; for at the worst, it is not to be supposed that the motion of the earth can amount in degree to that of the waves of the sea.' At San Francisco, where earthquakes are common, the builders of the Palace Hotel have adopted a patent embodying this principle, the walls being tied together by strong iron rods in every direction.

Miss Ormerod's valuable Report upon the injurious insects of 1884, and the means which have been found successful in suppressing them, has been presented to the Royal Agricultural Society. It is full of interest both for the agriculturist and the entomologist. The Report is so wide in its range that it would be quite impossible to do justice to it in the limited space at our command; but there are one or two observations which must not be passed over without remark, with regard to the dreaded hop aphid. There seems now no reason to doubt that the hop is attacked in the early spring by wingless females, which deposit upon the tender shoots living lice. Miss Ormerod is of the opinion, too, that the winged aphides which attack the plant later on, and which come from the sloe and damson as well as from the hops, represent slight varieties of one and the same species. For experimental purposes, an acre of hop-land was set apart with a view to determining the best way of dealing with the intruders, and various agents were employed as insecticides. Of these, mineral oil (paraffin) mixed with dry earth or similar material gave the best results. With reference to the caterpillars of the winter moth, which are so destructive to the foliage of fruit-trees, it is recommended that the best plan for their discomfiture is to smear the trees in December with a band of sticky fluid—known as Davidson's Composition—about twelve inches in width. The female moths, whose wings seem to be merely ornamental, are thus arrested by hundreds as they creep up the tree.

The lull in the recent excitement concerning electricity as a rival illuminant to gas may be traced to two main causes. One of these is the circumstance that many undeserving inventions were pushed to the front by unscrupulous or ignorant speculators. Companies were formed, only to come to grief after a brief period of existence. In this way, capital was soon frightened away from electric-lighting schemes, however promising they might be. The other cause of depression was due to the stringent rules adopted by the Board of Trade to prevent the recurrence of a monopoly such as is presented by the gas and water Companies. These rules have now been reconsidered by a Committee, with Lord Bury as chairman, and this Committee has given in its Report. Several modifications are recommended by which the Electric Lighting Act of 1882 may be made workable; but it is doubtful whether the gas Companies have any need to fear a rival until some much improved method of producing and popularising the light is discovered.

At Bellegarde (France), the inhabitants have the

advantage of a natural fall of water of about one hundred and sixty feet. Its strength has been intensified by throwing a dam across the stream where it occurs, with the result that a power of two thousand horses is obtained. This power is made to turn a large turbine, which actuates a couple of powerful Gramme machines. From this source, part of the town is lighted by electricity.

Dr Bond, of Gloucester, has contrived a Lactoscope, which will be found extremely useful where milk is suspected of having been mixed with water. It consists of a little glass dish with some black lines ruled across its interior, and a *pipette*, from which fluid can be dropped. The dish is filled when required for use with a measured quantity of water. The *pipette* is then filled with the milk to be tested, which, drop by drop, is added to the water until the black lines are obscured, the number of drops required before this end is attained being counted. A table is supplied by which the amount of butter-fat contained in the milk to give this result can be ascertained. This is not the first milk-tester which has been contrived which owes its efficiency to the relative opacity of pure milk and milk and water; but it is a very ingenious application of the principle.

In this connection, the following notes relative to the profits derived from milk-adulteration may be instructive. The Local Government Board, in a Report lately issued, say: 'Milk continues to be the chief subject of analysis, and the proportion of samples reported against is about one-fifth of the whole number examined. In the metropolis, however, the proportion is still larger, amounting to about twenty-six per cent. On a former occasion, we gave the grounds for a calculation that Londoners are paying between seventy and eighty thousand pounds a year for water sold under the name of milk, and we are inclined to think that the estimate was by no means excessive. We find that the public analyst for Plumstead calculates that in that single district the milkmen receive between seven and eight thousand pounds for water, while the fines for adulteration amount to about one hundred pounds annually.'

Now that the camel is being utilised as part of the equipment of the British army in the desert, attention is naturally turned to his capabilities and general behaviour. According to a correspondent of the *Times*, the endurance of the animal is very great. If required, it will go for a week without water, travelling every day, and will cover great distances at a good speed in a short time. But, according to Colonel Colborne, the animal has no right whatever to be termed patient. 'As far as my experience goes,' he writes, 'the camel is about the most impatient brute in the whole animal creation. He grumbles and swears when required to start, and grumbles and swears when he is required to stop; roars at you when you get on, roars at you when you get off, as he does when he is laden, and when he is unladen. His patience is usually the result of senility. He is usually vicious, and is often addicted to bolting. Neither is his intelligence sufficiently strong to allow him to distinguish noxious plants, and he is at all times a subject of anxiety to his driver on this account.'

Mr T. S. Wilson, the British vice-consul at

Lofoten (Norway), gives some interesting data concerning the application of surplus fish as a manure to land. In his district, he tells us, there are several manufactories where the fish is dried and reduced to powder, one factory alone having used thirty thousand barrels of herrings and more than ten thousand tons of fish of all kinds during the past year. The whole of this product comes to Great Britain, and is used for dressing the land. Those good people who will perhaps exclaim at this apparent waste of food-material, must remember that the fish if not used thus would be wasted, for it represents the surplus, which, for various reasons, cannot be exported or preserved for food. Used as a manure, it does permanent good to the soil, and produces valuable crops.

A simple but valuable invention has been brought before the Society of Architects by Mr George Wright, of 3 Westminster Chambers, London. It consists of a fixing-block made of fireproof material, which can be inserted into a wall like an ordinary brick, and into which nails can be driven with great ease. We need hardly point out that in every building there are many places where woodwork has to be attached to brickwork and masonry. The usual plan is to insert blocks of wood, which commonly shrink, require to be wedged up, and are certainly dangerous, from risk of fire, in the neighbourhood of stoves and chimneys. Indeed, many destructive fires have been traced to the presence of woodwork in unsuspected places. Mr Wright's fixing-blocks at once do away with this difficulty, and they are further of great use in bellhangers' and gasfitters' work.

An important experiment in water-purification has recently been carried out at Philadelphia, under the superintendence of the chief engineer to the water-supply department of that city. It has been known for some time that the purifying action of air upon water is much increased if the two be mingled under pressure, but the fact existed simply as the result of a laboratory experiment. To try the practicability of the principle on a big scale, a large turbine was converted into an air-pump, and was made to deliver a measured volume of air to a water-main. On analysis of the water before and after the experiment, it was found that the quantity of free oxygen in the water had increased by seventeen per cent. The amount of oxygen indicated represents the excess of what was required to purify the organic matter contained in the water previous to its aëration. The result of the experiment is considered highly satisfactory.

It is most satisfactory to find that the past year is distinguished by the fewest number of fatal accidents in our coal-mines of any year since official returns have been published, while at the same time the output of coal has amounted to the extraordinary total of one hundred and seventy million tons. In the half-century which covers the reign of Queen Victoria we find a rapid increase of the amount of coal annually raised, from thirty million tons to the amount just quoted. These figures naturally remind us of the old scare with regard to the ultimate exhaustion of our coal-fields, ament which we quote the words of Sir F. Bramwell at the meeting of the British Association four years

ago, who said that 'unless some wholly unexpected improvement were made in the steam-engine, those who lived to see the centenary of the Association in 1931 would find the steam-engine had become a curiosity, and was relegated to museums; for he could not believe steam (generated by coal) would continue to be the vehicle for transmitting heat into work.' These words the speaker indorsed the other day at the Institution of Civil Engineers.

There is no doubt that the reduction of fatal accidents in our mines is due to the various improvements which have been introduced, and to the attention which has been bestowed by competent men upon the causes which lead to explosions. Improved safety-lamps have, too, supplanted the old 'Davy,' which had no pretension to be called a safety-lamp, after modern plans of ventilation of mines were adopted. In still air, it was safe; but when the air in the workings attained a certain velocity, as it must do to secure good ventilation, it was worse than useless. In 'fiery' mines, it is now illegal to use gunpowder for blasting, and here we have another wise provision, which has doubtless saved many lives. There is reason to believe that with still further improvements in the methods of coal-getting, that industry will be as free from risk to the workers as other occupations which are carried on above ground.

Once more an outcry has arisen concerning mysterious illnesses which have eventually been traced to arsenical wall-papers. There is an erroneous idea that brilliant green is the only colour that is dangerous in this respect; but as a matter of fact, arsenic may be present in colours of many other hues. In the sanitary and unsanitary houses exhibited at the Health Exhibition, the latter was purposely hung with arsenical papers, and green was conspicuous by its absence; while in the sanitary house, green was present in abundance, but without any help from arsenic. Householders can easily protect themselves in this matter by observing two rules—the one is, to require a warranty from the paper-hanger that the paper supplied is free from the poison; and the other is, to have every shred of old paper stripped from the walls before the new paper is put on. We shall have some further remarks to offer on this subject, by-and-by.

We understand that an Exhibition of Photographs by Amateurs is shortly to be opened in London, under the auspices of the Stereoscopic Company, who offer valuable prizes for the best pictures in different classes. Gentlemen who are well known in the art world will act as judges. Photography is now so fashionable an amusement, that this Exhibition is likely to prove one of the successes of the London season.

Mr Henry Ffennell has published some interesting notes which he has collected with reference to the largest salmon taken, both with net and rod, from the principal rivers in the kingdom during the past year. The Tay, as might be expected, heads the list with a noble sixty-pounder; the Shannon gave up the next largest fish, weighing fifty-seven pounds; then follow the Tyne, fifty-one pounds; the Eden, forty-two pounds; the Derwent, forty-one pounds; the Tweed, thirty-nine pounds; and the Clyde, thirty-eight pounds. As a curiosity of fishing, it is

recorded that during the last week of the season at North Shields a fish of forty pounds kindly jumped into a boat lying at the fish-quay! Mr Ffennell remarks that the largest salmon which he ever saw, and which weighed seventy pounds, was that taken in the Tay in the year 1870, and of which a cast was made for the Fish Museum at South Kensington by the late Frank Buckland, who named it 'The King of Scots.'

Mr Guy, secretary of the Howietoun Fishery, has received a letter from Mr Spencer F. Baird, United States Commissioner of Fish and Fisheries, conveying the following information: 'I have much pleasure in acknowledging the arrival, in excellent condition, of the trout eggs sent by you per *Furnessia*. Some of these were transferred to Mr Mather's station at Cold Spring Harbour, N. Y., and the remainder to the White Fish station of the Commission, in charge of Mr Frank N. Clark, at Northville, Michigan. Both gentlemen greatly admire the method in which the eggs were packed, and the perfect condition in which they came to hand.'

In an article on 'Curiosities of the Electric Light,' which appeared in this *Journal* for March 1, last year, the following passage occurred: 'Fog has a peculiarly strong quenching power over the [electric] arc-light, owing to the preference it has for absorbing all the blue rays, and to the comparative poverty of the orange colour. A single gas jet can be seen about as far as a two-thousand-candle arc-light. This is because the gas jet is rich in those red rays which penetrate a fog without being absorbed.' With regard to this, an Australian correspondent writes us: 'The above passage brought to my mind what I was told years ago, that when driving at night in a fog, and the carriage or buggy lamps will not show the road, the light can be made to penetrate the fog by simply spreading a common red silk pocket-handkerchief over the glass of the lamps. This hint, even if of no use to electricians, may benefit some one compelled to drive home in the "small-hours."'

CROOKED ANSWERS.

THE knowledge attributed to the proverbial 'schoolboy' must always have amazed any person of only ordinary intelligence. Recent school examinations have, however, revealed a depth and variety of information possessed by juveniles, which bids fair to make the coming school-boy throw his predecessors quite into the shade. Amongst many startling items of information may be instanced that 'a fort is a place to put men in,' and a fortress 'a place to put women in.' 'A famine in the land,' it appears, is what made the Tower of Pisa lean; and 'cos the moon is so changin' is the reason why it is of a different gender from the sun. The surface of the earth consists of land and water, said a bright youngster; but when asked, 'What, then, do land and water make?' he instantly replied, 'Mud.'

In many cases, it is evident that the pupils do not understand what the questions mean. When inquiring, 'What comes next to man in

the scale of being?' it is rather surprising to be told it is 'his shirt.' It surely must have been the same boy who replied that the chief end of man was, 'The end what's got his head on.' The first man that went round the world was, in a little girl's opinion, 'The man in the moon.' A consonant is a 'portion of land surrounded by water.' It was 'Daniel in the lion's den' who said, 'It is not good for man to be alone;' and 'why the Israelites made a golden calf' was, 'Because they hadn't enough silver to make a cow.'

Reports of School-board examinations will form quite a comic library. 'What would have happened if Henry IV. of France had not been murdered?' The reply was: 'He would probably have died a natural death.' 'Where was Bishop Latimer burned to death?' 'In the fire,' replied a little fellow, looking very grave and wise. An equally unexpected reply was elicited from a pupil when asked, 'What did the Israelites do when they came out of the Red Sea?' 'They dried themselves.'—'What is the feminine of friar?' First bright boy: 'Hasn't any.'—'Next.' Second bright boy: 'Nun.'—'That's right.' First boy, indignantly: 'That's just what I said!'

The following is still more ludicrous. A teacher asked a juvenile class some questions regarding their knowledge of electricity, and inquired which of them had ever seen a magnet. One sharp boy immediately said he had seen lots of them. 'Where?' inquired his instructor, astonished at his proficiency. 'In cheese,' was the ready reply.

But the good things are not all monopolised by the boys. Some little girls were studying the history of David, the passage for the day being that which describes the shepherd boy's victory over Goliath. The teacher asked the question, 'Now, can any of you little girls tell me who killed the giant?' Quick as thought, one of the smallest responded, 'Jack.'

An examination of girls in Board schools for prizes offered by the National Health Society revealed some curious items of information. One reply to, 'Mention any occupations considered injurious to health,' was: 'Occupations which are injurious to health are carbohic acid gas, which is impure blood.' Another pupil said: 'A stone-mason's work is injurious, because when he is chipping he breathes in all the little chips, and then they are taken into the lungs.' A third says: 'A bootmaker's trade is very injurious, because the bootmakers press the boots against the thorax; and therefore it presses the thorax in, and it touches the heart; and if they do not die, they are cripples for life.' With a beautiful decisiveness, one girl declares that 'all mechanical work is injurious to health.' A reply to a question about digestion runs: 'We should never eat fat, because the food does not digest.' Another states that 'when food is swallowed, it passes through the windpipe;' and that 'the chyle flows up the middle of the backbone, and reaches the heart, where it meets the oxygen, and is purified.' Another says: 'The work of

the heart is to repair the different organs in about half a minute.' One little physiologist replies: 'We have an upper and a lower skin; the lower skin moves at its will, and the upper skin moves when we do.' Another child says: 'The heart is a comical shaped bag.' A third, that 'the upper skin is called *epperderby*, and the lower skin is called *derby*;' while a fourth enumerates the organs of digestion as 'stomach, *utensils*, liver, and spleen.'

Another school furnishes us with some choice specimens of general information, geography, history, and grammar. With reference to the first, we are told that 'the first day in Lent is called Matrimony,' moreover, that 'Matrimony is necessary to salvation;' and that 'our neighbour' is 'the person next door.' In geography, for instance, 'a volcano is a large mountain with a hole at the top and a fireplace at the bottom, and sometimes the fire comes out at the top and destroys the cities at the bottom, if there are any.' A watershed is a mountain like a cave, by which the river flows. A steppe is a mountain in France; and last, not least, we learn that 'we can go from London to Liverpool by the Brighton and South Coast line.' Equally ingenious and curious are the answers in grammar. One boy discovered there are three kinds of '*gs*,'—the hard '*g*,' the soft '*g*,' and the 'refugee.' Beau has for the feminine, 'arrow,' peacock, 'peacockess;' and German, 'Gerwoman;' the feminine of bachelor is 'old maid, widow;' of gosling, 'ganderess;' and of fox, 'hare.' The plural of colloquy is 'colleagues, colloquise;' and the chief parts of teach, 'teacher, taught.'

In English history, more surprises await us. 'King Stephen was the first English martyr who was martyred in England; he was burned alive in St Albans in Holborn.' 'Magna Charta was a great man, and he was called Magna Charta because he used to go about preaching.' The Heptarchy was called the United States, it appears, at one time; and it also may not be generally known that 'Saint Thomas à Becket was a tax-gatherer; and one day he quarrelled with the Black Prince, and wanted to kill him.' One sapient historian observed that the 'Treaty of Utrecht was fought between the Zulus and the English.' Some remarkable and original information was given, too, regarding Chaucer, Spenser, and Swift. The first-named person, it seems, wrote *Æsop's Fables*; the second wrote the *Wealth of Nations*; while the third, who lived in John's reign, was a 'great astronomer and joker.'

But it is in sacred history that many bright pupils surpass themselves in leaving the region of facts, and boldly plunging into a sea of speculation. In the opinion of one, 'the Pharisees were bad people who used to wash.' Pontius 'Pilot,' another affirmed, was one of the Arabian Nights; and a third genius discovered that 'the Greek translation of the Old Testament was called Latin.' To the question, 'Who wrote the Catechism?' one said, 'St Paul;' another, 'Moses;' and a third, 'One of the prophets.'—'To whom did St Philip preach?' was one of the questions put. 'To the unicorn,' was the answer.

Here is the pith of a talented youngster's paper on the 'Good Samaritan.' 'A certing man went down from jerslam to jeriker, and

he fell among thieves and the thorns sprang up and choaked him—whereupon he gave tuppins to the host, and praid take care on him and put him hon his hone hass. And he past by on the other side.' This and the following are not, as might be supposed, American exaggerations, but authenticated instances of examiners' experiences.

The last specimen is in answer to the question, 'Who was Moses?'—'He lived in a hark maid of bullrushes, and he kept a golden calf and worshipt braizen snakes, and he het nothin but qwhales and manner for forty years. He was kart by the air while riding under a bow of a tree and he was killed by his son Abson as he was hanging from the bow. His end was peace.'

OCCASIONAL NOTES.

THE AMERICAN BISON.

WITH reference to the present distribution of this almost extinct animal, an American paper states as follows: 'The division of the buffalo herds by the Union Pacific and Kansas Pacific railroads left two great bands of them—one on the north, and the other on the south side of the tracks. Those on the south side—in Texas, New Mexico, and Arizona—have long since disappeared from the ranges, their places being taken by the herds of domestic cattle and numerous flocks of sheep. The disappearance of the buffalo from the north-west dates from the conquest of Sitting Bull. When the military drove that great Indian warrior from the hunting-grounds of his tribe, the buffalo went with the red men. In the country were thousands upon thousands of buffaloes that fell beneath the bullets of the soldiers when there were no Indians to shoot at. It was grand sport for the soldiers, but it was death to the buffaloes. Upon the prairies of Dakota and Montana, where they once wandered in thousands, not a single one is now to be found. The only remnants of these mighty herds that once thronged the north-west are a few hundred animals scattered in the vicinity of Woody Mountain, across the line in British Manitoba. Last year a herd of about seventy-five thousand were corraled in the forks of the Little Missouri, on the south side of the Yellowstone River; but they were rounded up by the Gros Ventres and Crows, who attempted to drive them on their reservations before the white hunters could get a shot at them. In this they were unsuccessful, for the white hunters did get wind of the affair, and by the time both reds and whites got through with them, not five thousand of that mighty herd were left to cross the Yellowstone. The remnant, which did not get over in safety, continued their journey into the north, and at last found a refuge near Woody Mountain, in the British territory.'

WASTE SAND.

In all glass factories, the waste sand accumulates generally in very large quantities, so that it is difficult at times to know what to do with it. We learn, however, from a French publication (*Le Bulletin Technologique*) that a remedy has been found for this, by which the waste sand will not only be used up, but will be of great service in the production of articles of a kind

of earthenware resembling white bricks. First of all, the sand is subjected to enormous hydraulic pressure, and is then baked in furnaces at a very great heat, so that blocks of various sizes are produced of a white colour, being, in fact, a pure silex. These will resist the action of sulphuric and other powerful acids, as well as sharp frost, the heat of the sun, and wind and rain. They are very light, their specific gravity being only 1.5. They will be invaluable for decorative and architectural purposes, when combined with coloured bricks or stones.

THE FEEDING VALUE OF ENSILAGE.

At a recent meeting of the Highland and Agricultural Society at Edinburgh, Mr Colin Mackenzie stated that the test experiments which he had been conducting with ensilage at Portmore, Peeblesshire, were concluded in August last, when all the animals that had been fed on silage and turnips were sold. On February 14, when the experiments began, the six cattle that were fed on turnips and straw weighed on an average 7 cwt. 1 qr. 10½ lbs., and the five animals fed on silage averaged 7 cwt. 1 qr. 18½ lbs. When turned out to grass, on May 12, they averaged respectively 8 cwt. 1 qr. 2½ lbs. for the turnip-fed animals, and 8 cwt. 2 qrs. 12 lbs. for those getting silage. On June 17, the turnip-fed beasts averaged 8 cwt. 2 qrs. 8 lbs., while those fed on silage averaged 8 cwt. 3 qrs. 6 lbs. After being slaughtered, the dressed carcasses were weighed, when the animals getting turnips averaged thirty-nine stone seven and one-sixth pounds, and those fed on silage gave an average of forty-two stone four and two-fifth pounds. Thus the silage-fed animals, which started with an advantage of eight pounds of live weight, finished with an advantage of two stone eleven pounds of dead weight. An experiment undertaken with the view of testing the suitability of silage for ewes in winter showed that from birth till the date of sale the lambs produced by the ewes could not be distinguished either in size or condition from the lambs of ewes fed on turnips. Mr Mackenzie proceeded to say that the whole of the cattle in his possession were now being foddered on silage only, and he could not desire to see them in a more healthy and thriving condition. His silos now numbered five, and the whole had been filled with the produce of lea-fields, 'hained' for cutting, and a certain amount of plantation grass, and the whole of the silage was in excellent condition. In conclusion, he moved that the committee to whom the task was intrusted of making the experiment be discharged, and that the Society proceed to gather and publish details of a practical nature regarding the use of silage.—The motion was unanimously agreed to.

A NEW ANÆSTHETIC.

Mr C. S. Jeaffreson, F.R.C.S.E., writes as follows: 'Repeated paragraphs have lately appeared in many of the daily papers concerning a new drug—muriate of cocaine—which is declared to have the power, when applied to the surface of the eye, of producing complete anaesthesia, or insensibility to touch and painful impressions. By its agency the surgeon can, it is said, perform operations

which are confined to the globe of the eye with perfect freedom from pain. I am so frequently being asked questions upon this subject, and the matter is of such vast importance to the general public, that I make no apology for stating my experience of this new drug in the public press. I have no hesitation in saying that since the introduction of chloroform into surgical practice, there is no discovery which equals in importance the effects which are found to follow the use of this new preparation. I obtained a four per cent. solution of muriate of cocaine through the agency of Mr Bolam, chemist, and having first experimented upon Dr Houseman—my assistant at the Eye Infirmary—and found that its effects upon the eye were such as to produce complete anaesthesia, I used it in various operations with complete and unqualified success. I have no doubt that its introduction will mark a new era in ophthalmic practice; and a knowledge of the great benefits which, by its agency, are likely—I may say certain—to accrue to suffering humanity cannot be too prominently brought before the public.'

SNOW ON THE MOORS.

FEBRUARY.

O'er the wide waste of barren, bloomless moors,
Whereon not yet the purple heather-bells
Yield honey-spoil unto the roving bee,
Falls thick and white and fast the winter-snow.
Long, long ago, the pale blue harebells died;
The golden broom her petals one by one
Dropped 'mid the sere brown fern; and all the wealth
Of sweet wild-flowers that make bright and fair
The fells in autumn, withered lie and dead
Beneath the wintry blast.

The shepherd seeks,
Hardy and weather-seasoned though he be,
The shelter of his cot; his bonnet blue
Scarce keeps from off his scanty silver hairs
The pelting snow-storm; crouch the shivering ewes
With their new-yeaned and pretty bleating lambs,
'Neath the furze-covered shed.

Keen, keen, and cold,
The north wind whistles o'er the bleak hillside,
As, chill and gray, the gloaming closes in;
And ceaseless flutter from the leaden sky
The feathering flakes, till not a single bush,
Or tuft or hillock, through its covering shows,
But still and white and silent all around,
The landscape lies beneath a shroud of snow.

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2d. For its return in case of ineligibility, postage-stamps should accompany every manuscript.

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